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Great Western Railway.

SPECIFICATION

OF AN

IRON GOODS BREAK VAN

January 10*th*, 1852.

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General Dimensions.

	Ft.	In.
Extreme length over buffers	30	6
Length of Van (outside)	27	3
Width of Van (outside)	9	9
Width between axle guards (inside)	7	11½
Height of Van from floor to top of roof at side	6	0
Height of Van from floor to top of roof in centre	6	3
Height from rails to centre of buffers and draw bar	3	0
Width between centres of buffers	5	10
Width between centre and side chains	7	6
Distance of centres of wheels apart	9	2

The Frame.

The side and end frames are 7 inches deep of the section shown, with an angle iron 8-in. by 2-½in. in one piece, rivetted to the side frames, and an angle iron 3-in. by 2½-in. in one piece, rivetted to the end frames on face as shewn, with rivets ⅞ diameter and 3 inches apart from centre. Each side frame to be in one piece. The end frames to butt fully against the side frames, and both to be well rivetted in the angle to a strong angle bracket, formed on the stay rod socket, as shewn by the detail drawing. The corners of the frame to be kept perfectly square, vertically and horizontally. A plate ½-in. thick to be rivetted over each corner to both angle irons of the side and end frames.

The transverse bearers, four in number (in one peice each), of T. iron 6in. by 3in. of the section shown, fixed flush with the top of the side frames by angle brackets ½-in. thick, in the position and manner shewn, and well rivetted to the side frames.

The longitudinal bearers, two in number, in five pieces each, to be of T. iron 5in. by 3in. of the section shewn, accurately fitted between the transverse bearers and end frames, flush on the top and fastened by angle brackets, well rivetted in the position and manner shewn.

Four longitudinal Bearers of L iron, 5in. by 3in. to be fixed between the end frames and the first transverse bearer by angle brackets ½in. thick, in the position and manner shown, and well rivetted to the end frames and transverse bearers

Ten diagonal stays of angle iron 5-in. by 3-in., bent in the manner shewn, to be fixed at each end and against the transverse bearers. These stays to be 8-in. deep against the end frames, and 7-in. deep against the transverse bearers. The buffer rods and draw-bar passing through them; and 5-in. wide against the longitudinal bearers as shewn by the detail.

Two short transverse bearers of L iron 3½-in. by 1½-in.. are fixed between the side frames and the longitudinal bearer, by angle brackets ½-in. thick, in the position and manner shewn, for fixing the oscillating hanger of break.

The whole of the top to be covered with 9 plates of sheet iron weighing 7½-lbs. to the superficial foot, closely jointed on the transverse and longitudinal bearers, and well rivetted with ⅝-in. rivets (countersunk inside) to them; the diagonal stays and short transverse bearers, and top inner flange of side and end-frames.

The wheel boxes will be of sufficient height, that in case of a spring breaking the wheel shall have sufficient room to work when the frame is down on the spring stop. They will be composed of plate iron $\frac{3}{16}$-in. thick, and rivetted together with small angle iron, as shewn, to a radius of 2-ft. 1½-in.

Side Spring Brackets.

The side spring brackets, 12 in number, to be of the best forged scrap iron, of the form and dimensions shewn by the detail drawing, and fixed 4ft. 10-in. from centre to centre of bearing. The outside of the neck of the bracket to be filed, fitted, and well cleaned to the proper form. All the edges to be fitted square and well cut, and to be fixed 8-ft 5½ in. apart from centre to centre of bearing, transversely and equidistant from the centre line of the frame; when fixed the bearing must be perfectly parallel with the top of, and square to the frame.

Axle Guards.

The Axle Guards, 6 in number, to be of the best rolled scrap plate, ⅝-in. thick, free from cracks and flaws, made to the detail drawing, planed true between the horns, and well cleaned up on the edges. Rounded stay rods of 1½-in. gas tube with solid strap ends, to be fixed to the horns at the points by ⅝-in. bolts and strut stays of 1½-in. round iron with a nut at the end, to be continued from these up to the end of the side frame and rest in a bracket socket of wrought iron, forged in one piece with the corner bracket, as shewn by the detail drawing. The distance from face to face of the axle guards (inside) to be 7ft. 11½-in. closely fitted to the outside face of the side frame, by cutting away the moulding at the bottom for the horns to pass, and be equidistant from the centre line of the frame, and in a right line with each other. The distance apart from centre to centre longitudinally to be 9-ft. 2-in.

Draw Bar.

The Draw Bar to be of the best S. C. wrought iron. made as shewn by the detail drawing. The discs and parting plates for the vulcanised India-rubber spring to be well and accurately made, and the screws at the ends to have good and well-cut threads. A cast iron bush to be bolted to each of the transverse bearers for the draw bar to pass through, as shewn, to give sufficient wearing surface. The bar to pass through a turned elm block and gun-metal socket, with an iron band outside, and fixed to the end frame with 3 ⅝-in. bolts and nuts inside.

Buffer Rods.

The Buffer Rods, four in number, to be of the best S. C. wrought iron, made as shewn on the detail drawing, to pass through a turned elm block with a gun-metal socket and an iron band outside, fixed with 3 ⅝-in. bolts to the end frame, and screwed inside. The buffer rod to be 2½-in. diameter in the socket, and extend as far as the disc, and 1⅜-in. diameter for the rings to work on, with screw and nut at the ends to take the back blow. The rods to be furnished with discs and parting plates complete, as shewn. The buffer head to have a ⅜-in. plate screwed on the outside, with countersunk heads.

Side Connecting Chains.

The Side Connecting Chains, four in number, to be of 1-in best cable iron 2-ft. 3-in. long, each two to have hooks, the other two to have links 6-in. long, at their extremities—to be fixed to the end frame by eye bolts with square necks passing through them and the corner bracket, with nuts to be screwed inside against an ¼-in. iron and ⅛-inch vulcanised India-rubber washers. The chains to be fixed 7-ft. 6-in. apart from centres, and equidistant from the centre line of frame.

Steps.

The Step Irons, two in number, to be 1¼-in. round iron, with arms attached, as shewn, to carry the steps and screw into the head formed on the corner bracket, as shewn by the detail drawing. The steps to be of fancy ribbed plate iron, ¼-in. thick, according to sample, 1-ft. long by 9-in. wide, and rivetted with flush rivets on the top side of steps. The top step to be bent in the form shewn, and rivetted to the flange of angle iron of side frame with a strut stay 2-in. by ¼-in. as shewn.

Each side spring to have a Bailie's patent volute spring as an auxiliary, fixed as shewn.

Break.

The Break to be made according to the general and detail drawings, of the best materials. All the parts to be clean and well fitted, filed, bored and turned, respectively, as shewn. The blocks to be of willow or poplar.

Axle Boxes.

The axle boxes to be Normanville's Patent, clean, sound and well made castings, in every respect according to the detail drawings. The grease box covers to be strong, well made and closely fitted.

The bearings to be of "Vaucher's" patent metal, sound, well made and well bedded into the axle boxes, and fitted to the journals of the wheels. The grease holes in the axle boxes, and in the bearings, to be accurately formed to meet each other as shewn. The spring clips to be clean and well forged, filed and fitted to their places, the holes in the axle boxes to be rimered out true to receive them.

The Body.

The side standards, sixteen in number, to be of rolled L iron 2½-in. by 2½-in., turned under to the form shewn, with ½-in. plate bases, L iron 2-in. by 2-in. as shewn to connect, and well rivetted to them at the top. The bases of standards to be well rivetted to the L iron on face of, and inner flange on top of side frame. The end standards, six in number, to be of rolled T iron 2½-in. by 2½-in., with ½-in. plate bases, and fixed at such distances as to divide the ends into four equal panels, as shewn, and well rivetted to the L iron on top, and to L iron on top side of end frame. The inside of side standards to be filled in with well-seasoned ash, rounded as shewn on the drawing. The ends to be lined with ¾-inch lining board, as shewn. The sides between the door openings and ends outside, to be covered with ⅛-in. plate iron, well rivetted to the standards and L irons 2-in. by 2-in. at bottom, between the [illegible]ards and the L iron on side and end frames. The plates to be fixed ¼-in. below the nosing of L iron at bottom, to prevent the water getting in. The end plates next guard's box to have window openings, with fixed sashes, as shewn. The door openings at top to have a piece of oak 3½-in. by ¾-in. rivetted to the top L iron to form a rebate for the heads of the doors. The body to be divided in length into three compartments and a guard's box, at the distances shewn. The transverse partitions of ⅛-in. plate iron to extend from the floor plates to the roof, and be fixed to the T iron at top, with L iron 1½-in. by 1½-in. at the sides and bottom, well rivetted.

The guard's box to be lined with ¾-inch lining board, as shewn, and to have two seats 1-ft. 6-in. high, with 1-in. deal top and rounded nosing, fixed on framed legs and bearers. The floor plate in box to be covered with an inch deal floor transversely, fixed to the plates by rivets flush on the top side. The roof to be formed with T iron 2-in. by 2-in., as shewn, and covered with a roof plate ⅛-in. thick. The joints of the roof plate to be planed true and made watertight, turned up at the sides to form a gutter for the rain. The plate to be well rivetted to the T irons and L irons at the sides and ends. The roof lamp to be fixed in the centre of opening formed in the partition to guard's box, and the glass of Lamp to be protected with a wire cage, fixed to the roof inside. The top of van to have a moulding, as shewn, mitred round under the cover plate, well fixed to it, the sides, and ends. The roof to have a rail and standards on top, as shewn, of ⅜-in. round iron, 6-in. high. The standards to have plate bases ⅜-in. thick formed at the end, well rivetted to the side and end L irons at the top of van. The top end of the standards to be screwed and pass through the rail with a nut on the top.

Doors.

The Doors, twelve in number, to be made of well-seasoned oak 1⅝-in. thick, turned under to the form shewn. The whole of them to be lined inside with ¾-inch lining, and the outside to be covered with ⅛-in plate iron, keeping the plate over the joint of the door—⅜-in. to form a rebate, and well screwed to the frame-work. The doors to be 5-ft. 8⅜-in. high—eight of them in pairs, 6-ft. wide; two ditto 3-ft. wide and two ditto 1-ft. 9-in. wide. The top part of the doors for guard's box to have moveable mahogany sashes, at the height shewn, with ventilators over them. The doors to be furnished with a brass-handled turnbuckle each, and lock chases to be cut in the standards for the bolts to shoot into to fasten them. The whole of the doors to be hung with three strong hinges each, 2½ inches long, well rivetted to the standards, and provided with strong sliding bolt fastenings of approved description, and strong carriage door locks.

The dimensions written on the drawings and specification to be taken in preference to dimensions by scale, and any discrepancy that may arise between the drawings and specification to be settled by the Superintendent of the carriage department.

Painting.

All the joints, iron, and wood work to be painted two coats of zinc white before being put together, and all dirt, rust, or scale to be carefully removed from the iron before being painted. When completed, the whole of the van, including wheels and axles, axle boxes, side springs, and every part, whether supplied by the contractor or not under this contract, to be painted two coats of brown color with base of zinc white, and varnished (to sample to be supplied by the Company). Each van to have its number and the initials of the Company, in large yellow letters and figures, on each side, as may be directed.

The wheels and axles, axle boxes, side springs, and India-rubber rings for buffing and draw bar springs and roof lamps, except the protectors for outside and inside, will be supplied by the Company, and delivered to the Contractor at the Company's stores. The whole to be fitted, fixed, and mounted by the Contractor, and all other parts or things not herein named as to be supplied by the Company, to be furnished by the Contractor under this contract.

Materials and General Observations, &c.

The Company will supply the wheels and axles, and deliver them to the Contractor at any station on the Railway. The whole of the materials to be of the best description of their respective kinds—the iron framing clean rolled and free from flaws accurately fitted and strongly rivetted together, the detail parts to be clean and well made and filed to shape. The framing to be accurately square and straight and the whole of the detail parts fixed equidistant from the centre line.

The wood-work to be sound, dry, and free from any defects.

The whole to be put together in a substantial and workmanlike manner, to the satisfaction of the Company's Engineer, who shall have full power to reject all or any such vans as are not in full accordance with the spirit and intention of this Specification, as respects materials and workmanship, and be delivered complete and ready for use (free of charge) on the rails at any of the Stations on the Great Western Railway in May, June and July, 1852, and if not so delivered complete and ready for use within the above periods respectively the Contractor shall forfeit to the Company, as damages, twenty shillings per van per week for each week he shall exceed the time specified for delivery.

No advantage to be taken of any omission of details in the drawings, or in this Specification, as full explanation in detail will be given, should any part not be sufficiently shewn or understood.

The terms and conditions of payment to be specified in the Tender.

FORM OF TENDER.

of _____

_____ do hereby engage to construct and deliver

Goods [redacted] Vans, according to the foregoing Specification, and the Drawings therein referred to, for the sum of

_____ for each Van;

to be delivered by _____

_____

_____

Payments to be made as follows:

Name _____

Address _____

Date _____

NOTE.—The Form of Tender must NOT be detached from the Specification.